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Executive Summary

Dougherty and Associates, Inc. (***DAI***) was tasked by the Treasury Department to conduct an assessment of the Senior IT Management's core competencies to help address the requirements of the Clinger-Cohen Act. This Act specifies the need to identify the knowledge and skill levels required by agency personnel. The purpose of this effort was to conduct an analysis to determine to what degree Treasury's Senior IT Management corps possessed the identified competencies. ***DAI*** was tasked to develop an assessment instrument that measured individual, CIO collective, and bureau collective levels of current capability relative to the identified competencies, conduct an assessment, and to report on the results and draw appropriate conclusions based on the results. ***DAI*** assessed overall competencies across all IT Senior Management personnel, as well as within different organizational levels, all fourteen bureaus and one Department-wide CIO office of the Treasury Department.

This report provides a summary of the process followed to develop and implement the Senior IT Management Assessment, the analyses of the results, conclusions, and recommendations on how the Treasury Department may use the data collected from this survey to meet the developmental needs of Senior IT staff. This report is structured into six main sections:

- *Section I*: Introduction to the project
- *Section II*: Method (survey item development and survey administration method)
- *Section III*: Results: Quantitative
- *Section IV*: Results: Qualitative
- *Section V*: Conclusions
- *Section VI*: Recommendations

In addition to the above, we have included one Attachment and three Appendices: Attachment 1 is the Competency Framework for CIOs and Direct Reports, Appendix A presents the final survey; Appendix B contains a comprehensive annotated questionnaire for overall results, by bureau, by bureau size, and by organizational level; and Appendix C contains specific results from the qualitative analyses of an open-ended item presented in the survey.

The Method section of the report presents why DAI selected and Internet Based Survey Technique and a brief description of the technology, the manner in which survey items were selected for inclusion in the Senior IT Management Assessment, the rationale for using various rating scales to measure the competencies, and the methodology employed for survey administration.

In the Quantitative Results section a summary of the findings is presented descriptively in both graphic and tabular format, and includes measures of central tendency (means), sample size, and response rate percentages. Supplemental Analysis of Variance (ANOVA) and t-tests were computed in some cases, to determine whether statistically significant differences exist between certain subgoupings. As we had predicted, however, the small sample sizes (especially for examining subgroup differences) caused the inferential tests to show *statistically* insignificant differences; however, we highlight *meaningful* mean differences between subgroups, which will assist the Treasury Department in prioritizing implementations based on results of the survey. In the Qualitative Results section the findings from the open-ended question that relates to the Development Need section of the survey are provided. The first question in the Development Need section asked respondents to identify which group had the greatest development need. Possible responses were: (1) CIOs and Deputy CIOs, (2) Direct Reports to CIOs or Direct Reports to Deputy CIOs, (3) Executives or Managers with IT responsibilities (reporting to a

functional leader; not a direct report to a CIO or Deputy CIO), (4) IT staff, and (5) no development need for any of the groups. The open-ended question asked the respondents to explain why the group they selected had the greatest amount of development need, and in what specific areas this development need exists. Forty eight of the 67 survey participants provided a response to this open-ended question.

In the Conclusions and Recommendations section the richness and comprehensiveness of the data provide the Treasury Department with a wealth of information to assist in developing plans that meet the needs of senior management, as well as the Treasury Department as a whole. However, some key findings suggest the following:

- The most important and frequently used competencies are Leadership and People Management. Small bureaus also had high ratings in the importance and frequency of Technical competency skills.
- CIOs and Deputy CIOs rate Leadership, Mapping IT to Mission, People Management, and Budget competencies as being of extreme importance, and frequently performed.
- Direct Reports to CIOs rate Leadership, People Management, and Technical competencies as the most important and most frequently performed competencies.
- Executives and Managers rated Leadership, People Management, and Technical Competencies as the most important and frequently performed competencies.
- Executives and Managers in small and medium sized bureaus rated Implementation and Performance Measurement high in importance and moderately high in frequency and developmental need.

In addition to presenting results concerning the above findings, this report provides much additional information regarding the importance, frequency, and developmental need of the ten competencies measured, as well as overall and subgroup-specific findings related to each competency. Following discussion of the results, we present a synthesis of the results in a conclusions section, and provide recommendations based on key findings from the Competency Survey.

Recommendations are linked to results of the Senior IT Management Assessment. These recommendations include the following: periodic assessment of competencies, leadership development, refinement of rewards and recognition programs to further attract and retain technical personnel, increase employee training programs and training sources, and refinement of the current performance management system, which includes providing performance management training to managers and executives.

I. Introduction

1.1 Background

The Treasury Department Senior IT Management Assessment project conducted by Dougherty & Associates, Inc. ***(DAI***) is in response to meeting the requirements of section 5125(c) of the Clinger-Cohen Act of 1996 which requires the Chief Information Officer in each agency to identify the knowledge and skills needed by personnel in the agency to achieve performance goals related to information resource management. Based on this information, the Treasury Department's CIO Council commissioned a study to identify requirements for its CIOs and immediate report level personnel (approximately 70 officials). During the Phase I effort, the specific competencies expected of CIOs were identified. These competencies were based on a study conducted by the University of Maryland. The University of Maryland study included interviews with 55 CIOs and direct reports to validate the competencies and to clarify their meaning for executives.

Following the identification of these competencies, Phase II was implemented to meet the continued requirements of the Clinger-Cohen Act, and involved the design and implementation of the Senior IT Management Assessment. The purpose of this effort was to conduct an analysis to determine to what degree Treasury's IT Senior Management corps possessed the identified competencies. Therefore ***DAI*** was tasked to develop an assessment instrument that measured individual, CIO collective, and bureau collective levels of current capability relative to the identified competencies, conduct an assessment, and to report on the results and draw appropriate conclusions based on the results.

The overall objective of this project was to conduct the Senior IT Management Assessment to identify valid and reliable data about the importance, frequency and developmental need for each competency as indicated by the respondents to the survey. Based on these findings recommendations and conclusions were identified that can be used for planning to support the developmental needs of CIOs and their direct reports and managers.

1.2 Competencies

As part of the development of the survey items, ***DAI*** drew in part on competencies developed by a previous competency study conducted by the University of Maryland. The final competencies included four major groupings which described ten core competencies:

Policy and Organizational:

- Competency 1: Mapping IT to Mission
- Competency 2: Budget Process
- Competency 3: Organizational Process

Capital Planning:

- Competency 4: Investment Assessment
- Competency 5: Acquisition
- Competency 6: Implementation and Performance Measures

Managerial:

- Competency 7: Leadership

Competency 8: Process Management
Competency 9: People Management

Technical:
Competency 10: Technical

DAI used these competencies as the basis for the survey, which asks respondents to identify the importance of each competency, the frequency with which each competency is required on the job, and the self-reported developmental need for each competency. A copy of the Competency Framework for CIOs and Direct Reports can be found in Attachment 1.

II. Method

This section of the report presents why DAI selected and Internet Based Survey Technique and a brief description of the technology, the manner in which survey items were selected for inclusion in the Senior IT Management Assessment, the rationale for using various rating scales to measure the competencies, and the methodology employed for survey administration.

2.1. Selection of the Internet Based Survey Technique

Since CIO's are the key individuals responsible for information management and one of their "General Responsibilities" (SEC.5125 (b) (3) as stated in the Clinger-Cohen Act is to*"…promote the effective and efficient design and operation of all major information resource management processes for the executive agency, including improvements to work processes of the executive agency…,"* ***DAI*** believed the most effective and efficient way to conduct this survey was via the Internet as compared to a paper based mail-out survey. ***DAI***'s web site was used to house the survey, send e-mails to potential respondents, and provide them information on how to access and complete the survey. Using ***DAI***'s web page assured additional confidentiality to the respondents.

2.2. Internet-Based Survey Technology

DAI used a program called Raosoft EZSurvey to develop and administer the survey via the Internet. With this program the survey was quickly developed and loaded on ***DAI***'s web server. To complete the survey, respondents went to ***DAI***'s web site, downloaded the survey, and answered the questions on-line. Data collection was efficient as well; once a respondent completed a survey, the data was automatically downloaded into a database ***DAI*** created specifically for this effort. Data was then transferred directly into SPSS, thereby avoiding manual data entry which can lead to human error (key entry errors).

2.3. Survey Items

Prior to the involvement of ***DAI*** in this survey effort, the Federal CIO Council and Treasury staff had invested time and effort to create the framework for core IT executive competencies, and general definitions of the core competencies. In addition, the University of Maryland had developed more specific definitions of the competencies, and preliminary behavioral characteristics for each competency definition. This framework provided ***DAI*** with four general categories (policy and organizational, capital planning, managerial, and technical) containing the ten core competencies (as were described in Section I: Introduction).

The definitions and behavioral characteristics developed for each of the competencies were used as a basis for ***DAI***'s survey item development. In addition, the survey included statistically reliable items which ***DAI*** has used in similar competency work for large populations. The survey items were selected from large-scale surveys ***DAI*** had conducted and used for similar survey initiatives in the past. These surveys include: the Department of Defense *Senior Executive Service Core Qualifications Study*, the *Leadership Effectiveness Inventory* (U.S. Office of Personnel Management); *Skillscope* (developed by the Center for Creative Leadership), and the *Leadership and Management Competency Inventories* (HayGroup, Inc.). The use of a mix of relevant items from these validated and reliable surveys helped increase the reliability of all results from the Treasury's survey. Treasury staff reviewed the questions and suggested revisions through a series of subsequent drafts. The final instrument was structured to accommodate the different competencies of interest, while at the same time minimizing the amount of time required for completion of the survey (minimization of response burden).

The final section of the survey included demographic items, such as the respondents IT investment role, responsibility, retirement eligibility, and training issues. Two other items which were of critical importance to the statistical subgrouping analyses were included in this section: the respondent's level within the organization, and the name of the respondents' bureau. The information on the bureau allowed ***DAI*** to cluster bureaus by size (small, medium, and large) and conduct subgroup comparisons; the information on the respondent's level within the organization allowed comparisons among competency ratings between CIOs, direct reports, and executives/managers. The questionnaire was pre-tested by four non-treasury personnel to assure instructions were understood, wording of the questions was clear, and response categories were parsimonious.

2.4. Rating Scales and Response Categories

Respondents rated each competency overall and each component of the competency using three separate items, each containing a different balanced scale:

Scale 1: **Importance**

The importance of this behavior for my position is:

- ❾ Very Important
- ❾ Important
- ❾ Moderately Important
- ❾ Unimportant

- ❾ Very Unimportant

Scale 2: **Frequency**

The frequency with which I have displayed this behavior during the past year is:

- ❾ Extremely Frequently
- ❾ Repeatedly at Various Times
- ❾ Occasionally
- ❾ Once or Twice
- ❾ Never

Scale 3: **Developmental Need**

My need to further develop my skills in this behavior is:

- ❾ Very High
- ❾ Somewhat High
- ❾ Neither High nor Low
- ❾ Somewhat Low
- ❾ Very Low

The final Senior IT Management Assessment is presented in *Appendix A* of this report.

Using these three scales allows a thorough comparison of not only the importance of the competency, but also the frequency with which the competency is displayed and the self-perceived developmental need. Therefore, results will allow interpretation of each competency in light of it's importance to the position, the frequency with which it is performed, and the developmental need in that specific area. These comparisons are especially valuable considering fixed resources and time constraints, and allow prioritization of possible interventions. Therefore, due to an organization's spending limitations for competency development, this data can be used to set priorities. For example, we suggest initial development of competencies which are high in importance, high in frequency, and high in developmental need. Once these competencies are developed and effectively used by senior management, other competencies which are possibly somewhat lower in one or two of the measurements (importance, frequency, or developmental need) may then become key priorities for development, assessment, and training.

2.5. Internet Survey

2.5.1. Design and Preparation

Following development and approval of the final survey items and scales used in the survey, each item and response set was coded using Raosoft, Inc.'s EZSurvey software. The software created cgi (Common Gateway Interface) compliant web forms for collecting data via the Internet. After the web form was created using the EZSurvey software, the web page was made aesthetically
pleasing by adding tables, changing fonts and type sizes, and adding customized graphics (e.g., Department of the Treasury seal, Treasury building).

The web survey was accessed from ***DAI***'s home page. The Treasury Seal was placed at an obvious location on the home page and served as the link to the survey. The survey and the data generated when respondents took the survey was made secure in two ways: (1) for access to the survey page, a user name and password was required; and (2) the database that resided on the web server was only accessible by ***DAI***- two employees were provided with the login ID and password to the web server for the specific purposes of backing up the survey data and troubleshooting any problems.

2.5.2. Collecting Results

E-mail notifications were sent to each survey respondent that included: general information about the Senior IT Management Assessment, and how the survey could be accessed via the Internet. Respondents were provided with details on how to access the survey through ***DAI***'s home page, and were given the user name and password. The e-mail notification also described some pertinent information regarding what respondents would see once they accessed the survey (e.g., general instructions on completing the survey, and how to submit the completed form) and assured respondents that the survey was designed to be entirely confidential. Periodic reminder e-mail notices were sent throughout the survey administration.

Following completion and submission of the survey, respondents were taken to a message that thanked them for their participation. To track who took the survey while maintaining respondent confidentiality, an automated e-mail link was placed on the page that was set up to mail messages directly to ***DAI***'s survey mailbox. Survey respondents were asked to click on the link and send a message indicating that they had taken the survey. Reminder follow-up telephone calls were made to those invited survey participants who did not send this e-mail message.

The file generated by the submission of the web survey data was in ASCII text, tab-delimited format. This file was backed up on a daily bases to prevent the potential loss of data due to unlikely events such as data corruption or web server problems. At the end of the survey administration period, the ASCII text file was removed from the web server and transferred into SPSS for analysis.

III. Results: Quantitative

3.1 Introduction

This section presents the results of statistical analyses conducted on the Senior IT Management Assessment. Summary results are presented descriptively in both graphic tabular format, and include measures of central tendency (means), sample size, and response rate percentages.

Supplemental Analysis of Variance (ANOVA) and t-tests were computed in some cases, to determine whether statistically significant differences exist between certain subgoupings. As we had predicted, however, the small sample sizes (especially for examining subgroup differences)

caused the inferential tests to show *statistically* insignificant differences; however, we highlight *meaningful* mean differences between subgroups, which will assist the Treasury Department in prioritizing implementations based on results of the survey.

Due also to small population sizes (and therefore small sample sizes) for specific bureaus, in an effort to maintain respondent confidentiality, some results are grouped by bureau size. All bureaus were classified as either small, medium, or large; this resulted in the following classifications:

Small Bureaus:	**Medium Bureaus:**	**Large Bureaus:**
FinCEN	ATF	Customs
FLETC	BEP	IRS
Inspector General	BPD	Treasury - CIO
	FMS	
	Mint	
	OCC	
	OTS	
	Secret Service	
	Treasury - ASD	

To provide additional clarity, this Quantitative Results section is organized into specific subsections. First, we describe overall response rates and demographics of respondents. Next, we discuss the contents of a highly detailed Appendix which contains all of the results overall, by subgroup, and by bureau. Then, in the subsections that follow, we present key findings for the population as a whole, for different bureau sizes, for the three organizational levels, and some key bureau-specific results. The last subsection presents results from other items, including retirement and training issues.

3.2 Demographics

3.2.1. Response Rates

A total of 87 potential respondents received notification about the Internet-based competency survey. Of this population, a total of 67 individuals responded, for an overall response rate of 77%. In Table 1, we present the breakout of these respondents by both bureau size.

Table 1: Response Rates by Bureau Size

	Total Response Rate	**Response Rate by Bureau Size**		
		Small	Medium	Large
Population Size	**87**	14	52	22
Response Rate (*n*)	**67**	13	35	15
Response Rate (%)	**77%**	93%	67%	68%

3.2.2. Data Anomalies

Extra Respondent in Treasury-CIO: Five individuals reported that they were part of Treasury-CIO, however we know there are only four individuals in this group. ***DAI*** pursued several avenues (telephone calls, emails, checking data for accuracy) to understand where the extra data point could have come from, however due to confidentiality issues, this extra person was not able to be identified. Thus, all five individuals are included in analyses for Treasury-CIO.

Extra respondents in CIO/Deputy CIO Group: Results indicate 15 CIOs/Deputy CIOs completed the survey, however, three individuals in one bureau and two individuals in another bureau stated they were CIOs/Deputy CIOs; for both bureaus, only one individual is actually at this level. A few other bureaus did not have a respondent state they were a CIO or Deputy CIO. Therefore, overall analyses for CIOs are based on 15 respondents, but bureau-level analyses are based on fewer respondents. To assure data integrity despite these anomalies, ***DAI*** checked for outliers in these subgroups by computing z-scores for the CIO-level respondents within the two bureaus which had "extra" CIOs/Deputy CIOs. These z-scores were computed within all competency ratings. Additionally, responses were plotted to check for possible duplication of one individual's survey. Results of these efforts indicated that in no case was there an obvious outlier, nor was there a duplication of a respondent's survey. Thus, the "addition" of these

individual's scores in the CIO subgroup analyses does not lead to biased conclusions, since their

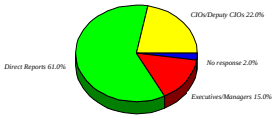
scores do not unduly influence the resultant data set for this subgroup.

Missing Bureau Indications: Four individuals did not indicate the bureau to which they belong; thus due to the confidential/anonymous manner in which data was collected, it was impossible to determine to which bureau these individuals belong. These four individuals are therefore included in the overall analyses, however are not included in the bureau-specific analyses.

3.2.3. Organizational Levels, Responsibilities, and Roles of Respondents

For the final sample of 67 individuals, most responded to an item requesting them to indicate their position level within the organization. As shown in Figure 1, the largest percentage of respondents are Direct Reports to CIOs and/or Deputy CIOs. Subgroup analyses by bureau size show similar percentages in the small, medium, and large size bureaus, however in the large bureau group, no (0%) executives or managers responded to this item. Therefore, especially for the large bureaus, it is important to note that interpretation of the findings from the executive or manager subgroup would be based only on respondents from other bureaus within the Treasury department.

Figure 1: Percentage of Respondents by Organizational Level



Respondents were also asked to indicate their IT investment role; these results are shown in

Figure 2.

Across all respondents, nearly half consult on IT investments, and approximately a third are full partners in program decisions involving IT investments. In general, these percentages are similar across all three bureau size subgroups.

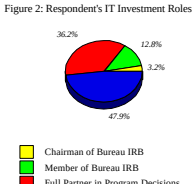


Figure 3 shows the percentage of respondents who indicate they are responsible for IT policy, IT delivery, or both. Across all respondents, nearly two-thirds are responsible for both IT policy and IT delivery.

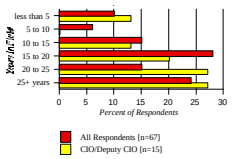
Figure 3: All Respondents: IT Policy and Delivery Responsibilites

Specific subgroup analyses show that across all three bureau sizes, results are consistent with the overall percentages shown in Figure 3. However, when examining these responsibilities by organizational level, a different pattern or results appears. CIOs and Deputy CIOs report that they have responsibility for both IT policy and IT delivery more than do Direct Reports or Executives/Managers (see Figure 4).

Figure 4: CIOs/Deputy CIOs: IT Policy and Delivery Responsibilites

One additional job-related demographic question asked respondents to indicate the total number of years they have worked in the data processing or IRM area. Across all respondents, and within subgroups, approximately two thirds (67%) of respondents have worked in the data processing/IRM field for 15 years or more (see Figure 5). Only one in ten (10%) have been in this field for less than five years.

Figure 5: Years in Data Processing or IRM Field



3.2.4. Annotated Questionnaire

Survey results within this report are based primarily on aggregate results for each competency, for all respondents, as well as subgroupings by bureau size and by organizational level. Due to the large number of questions, as well as three scales for each competency question, specific results for individual questions are presented in a detailed appendix (*Appendix B*). This appendix presents the survey in it's entirety (all survey questions, including demographic items). For each competency, the overall ratings of the competency are presented first, followed by the individual items within that competency. For each survey item, we present the entire sample's mean ratings of the importance, frequency, and developmental need for that item. We also present these mean ratings by specific bureau, by bureau size, and by organizational level.

To maintain the confidentiality of individual respondents' results, we only report means which are based on four or more respondents. Therefore, for bureaus which have three of fewer total respondents, we do not present bureau-level responses, and simply have labeled this is "insufficient data". For these bureaus, it is possible that only one or two individuals responded to each item, therefore reporting a "mean" response for the category could lead to erroneous conclusions which lack reliability and validity.

It is ***DAI***'s belief that this highly detailed appendix will be valuable to the Treasury Department, should very specific results (by item, or by specific bureau) be desired. However, the bureau-level data in this appendix is provided only for background, and should not be treated as actionable

data due to the small sample sizes within all bureaus. Rather, the larger sample sizes in the reports of the overall organizational data (presented in the first row of each table), and the grouped responses by bureau size and by organizational level provide more statistically reliable results, and should be the data upon which conclusions are drawn and actions are taken.

3.2.5. Overall Mean Ratings for Competencies

One objective of the Senior IT Management Assessment was to explore how employees, in general, rate the importance, behavioral frequency, and their developmental need of each of the ten overall competencies. At the beginning of each set of questions, respondents were asked to rate how important the competency is for their job, how frequently they have performed that competency in the past year, and to indicate their personal developmental need in performing that competency. Figure 6 summarizes the mean ratings along these three rating scales for the three Policy and Organizational Competencies.

Figure 6: Mean Competency Ratings: Policy and Organizational

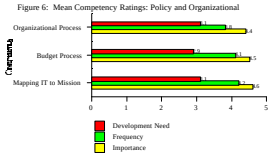
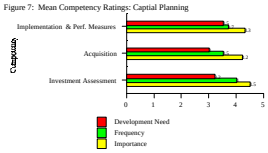
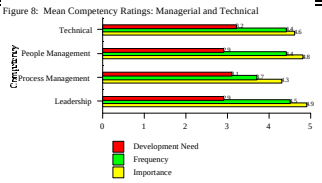


Figure 7 shows the mean ratings for the three Capital Planning competencies, and Figure 8 presents the mean ratings for the three Managerial and one Technical competencies.

Figure 7: Mean Competency Ratings: Captial Planning





From these figures, one can see that the means for Developmental Need are lowest, whereas the means for Importance are highest. Differences also exist when comparing specific competencies; in general, the Importance and Frequency of Capital Planning competencies are rated lower that the Importance and Frequency of Policy/Organizational, Managerial, and Technical competencies. As shown in Appendix A, this pattern of results is consistent across all specific bureaus for which the means could be computed.

Overall Importance Ratings of Competencies

Across all ten competencies, the ones rated as most important (highest mean [ℑ] ratings) are Leadership (ℑ=4.9) and People Management (ℑ=4.8). No competencies have a mean importance rating less than a 4.0, indicating that overall, the items selected for the Senior IT Management Assessment are valid items for assessing and measuring these individual, group, and organizational competencies.

Standard deviations (☞) were computed for each mean rating on the competencies; the Importance rating for the Acquisition competency was the only variable to have a standard deviation greater than 1.00. Therefore, although the importance of acquisition was high (ℑ=4.2), the high standard deviation indicates respondents were more variable in their ratings of this competency.

Overall Frequency Ratings of Competencies

When asked to indicate the frequency with which they have displayed behaviors associated with each competency, respondents indicate that they perform Leadership (ℑ=4.5), People Management (ℑ=4.4), and Technical (ℑ=4.4) duties most often. The competency performed least frequently is Acquisition (ℑ=3.5). Yet as with the Importance rating, this competency is the only one of the ten which respondents agree less often on (☞>1.00).

Overall Developmental Need of Competencies

Among all respondents, the greatest developmental need is for Implementation and Performance Measures ($\bar{x}$=3.5). All developmental need mean ratings for the remaining nine competencies are between 2.9 and 3.2, showing that all respondents *in general* have a moderate amount of self-assessed development need in the remaining areas. The variability of these developmental need ratings is, however, high. For many (70%) of the competencies, standard deviations are greater than 1.00, showing that respondents are not consistent in their developmental need assessment.

The sections which follow discuss the general findings in more detail, by bureau size and by organizational level. Interestingly, significant differences between these subgroups exist , underscoring the need to examine results in light of bureau and organizational level differences.

3.2.6. Overall Competency Ratings by Bureau Size

As discussed in Section I of this report, bureaus are grouped according to small, medium, and large bureaus for bureau-level analyses contained in this section of the report. As shown in Table 2, results for the Leadership competency are consistently high across all bureau sizes, paralleling the high overall competency rating (presented in Section 3.2.5). In addition, all importance ratings are above a mean rating of 4.0, again indicating the items are parsimonious and valid predictors of required competencies.

Small bureaus show somewhat lower ratings in the importance of Budget Process and People Management, and have higher mean ratings in Technical competencies, than do medium or large size bureaus. Both small and medium size bureaus have lower ratings in Investment Assessment than do large bureaus.

Table 2: Mean Competency IMPORTANCE Ratings by Bureau Size

Competencies	Bureau Size		
POLICY AND ORGANIZATIONAL	**Small**	**Medium**	**Large**
Mapping IT to Mission	4.6	4.6	4.7
Budget Process	4.2*	4.6	4.5
Organizational Processes	4.6	4.3	4.2
CAPITAL PLANNING			
Investment Assessment	4.4	4.3	4.9
Acquisition	4.2	4.2*	4.1
Implementation & Performance Measures	4.2	4.3	4.1*
MANAGERIAL			
Leadership	4.9	4.8	4.9
Process Management	4.4	4.2	4.4
People Management	4.5	4.8	4.8
TECHNICAL			
Technical	4.9	4.7	4.5

** the standard deviations associated with these means is equal to or greater than 1.00*

Similarly, in Table 3, the frequency with which competencies associated with budget and people management are performed are lower in the small bureaus than in the medium or large bureaus. Also, respondents in small bureaus rate the frequency with which they use Technical

competencies higher than do respondents in large bureaus.

Table 3 : Mean Competency FREQUENCY Ratings by Bureau Size

Competencies	Bureau Size		
POLICY AND ORGANIZATIONAL	**Small**	**Medium**	**Large**
Mapping IT to Mission	4.1	4.2	4.4
Budget Process	3.4*	4.3	4.1
Organizational Processes	3.9	3.8	3.7
CAPITAL PLANNING			
Investment Assessment	3.9	4.0	4.1
Acquisition	3.5	3.5*	3.4*
Implementation & Performance Measures	3.5	3.8	3.5
MANAGERIAL			
Leadership	4.5	4.6	4.5
Process Management	3.7	3.7	3.7
People Management	3.8	4.5	4.5
TECHNICAL			
Technical	4.6	4.5	4.0

** the standard deviations associated with these means is equal to or greater than 1.00*

Self-reported developmental need by bureau size also presents some interesting results. As shown in Table 4, individuals especially in large and to some degree in medium-size bureaus feel that they require more developmental need within Technical competencies than do those in small bureaus. However, individuals in small and medium size bureaus report that they require more development in the Implementation and Performance Measures areas.

Table 4: Mean Competency DEVELOPMENTAL NEED Ratings by Bureau Size

Competencies	Bureau Size		
POLICY AND ORGANIZATIONAL	**Small**	**Medium**	**Large**
Mapping IT to Mission	3.1	3.2	2.9*
Budget Process	2.9*	2.9*	2.6*
Organizational Processes	3.0*	3.2	3.1
CAPITAL PLANNING			
Investment Assessment	2.8	3.2*	3.3*
Acquisition	2.8	2.9*	3.1*
Implementation & Performance Measures	3.5	3.6	3.1*
MANAGERIAL			
Leadership	2.8*	2.9	2.6*
Process Management	2.9	3.2	2.9
People Management	2.7*	3.1*	2.5
TECHNICAL			
Technical	2.5*	3.2*	3.7

** the standard deviations associated with these means is equal to or greater than 1.00*

It is of interest to note that the standard deviations (variabilities) within the Developmental Need ratings are higher and occur across many more items than for the Importance and Frequency ratings. This may be because the competencies have not been used as selection criteria, nor have they been used for skills-development. Essentially, people came into the organization with their own skill sets, where each individual has his or her own unique strengths and unique developmental needs. Therefore, potential wide variety of skill sets held by respondents may account for the higher standard deviations among the Developmental Need ratings.

3.2.7. Overall Competency Ratings by Organizational Level

In this section, we discuss the analyses by organizational level rather than by bureau size. These results will further highlight which specific levels perform certain competencies more often than do other levels, how important the competency is to their position, and specific developmental needs for each level in the organization.

The three organizational levels discussed in this section are (1) CIOs and Deputy CIOs, (2) Direct Reports to CIOs or Deputy CIOs with broad functional IT responsibilities, and (3) Executives or Managers with IT responsibility reporting to a functional leader. For each competency, the importance, frequency, and developmental need of each level was assessed.

Table 5 presents the mean ratings on overall competencies, by each of these levels.

Table 5: Mean Competency IMPORTANCE Ratings by Organizational Level

Competencies	ORGANIZATIONAL LEVEL		
POLICY AND ORGANIZATIONAL	**CIO or Deputy CIO**	**Direct Report**	**Executive or Manager**
Mapping IT to Mission	5.0	4.6	4.2
Budget Process	4.8	4.4	4.3
Organizational Processes	4.5	4.3	4.3
CAPITAL PLANNING			
Investment Assessment	4.7	4.4	4.4
Acquisition	4.5	4.2	3.8*
Implementation & Performance Measures	4.4	4.3	4.4
MANAGERIAL			
Leadership	5.0	4.8	5.0
Process Management	4.4	4.2	4.7
People Management	4.8	4.7	4.9
TECHNICAL			
Technical	4.5	4.7	4.8

** the standard deviations associated with these means is equal to or greater than 1.00*

As shown in these results, Leadership is rated as being very important for all three levels. Results between levels differ, however, for a few of the competencies. CIOs or Deputy CIOs rate Mapping IT to Mission, Budget Process, and Acquisition as having higher importance to their position than do Direct Reports or Executives/Managers. Conversely, Executives/Managers rate Process Management as being more important to their position than do Direct Reports or CIOs and Deputy CIOs.

The only mean importance rating under a mean of 4.0 is for the Acquisition competency for Executives/Managers ($\bar{x}$=3.8). However, the variability in responses to the Acquisition competency by these Executives/Managers is high, indicating less agreement among respondents for the importance of this competency.

In Table 6, the mean frequency ratings across the three organizational levels for each overall competency are presented.

Table 6: Mean Competency FREQUENCY Ratings by Organizational Level

Competencies	ORGANIZATIONAL LEVEL		
POLICY AND ORGANIZATIONAL	**CIO or Deputy CIO**	**Direct Report**	**Executive or Manager**
Mapping IT to Mission	4.4	4.2	4.0*
Budget Process	4.4	4.1	3.7*
Organizational Processes	4.0	3.8	3.8
CAPITAL PLANNING			
Investment Assessment	4.2	4.0	4.0
Acquisition	4.1	3.4	3.1
Implementation & Performance Measures	3.9	3.7	3.6
MANAGERIAL			
Leadership	4.5	4.5	4.6
Process Management	4.0	3.6	3.7
People Management	4.4	4.3	4.5
TECHNICAL			
Technical	4.4	4.4	4.6

** the standard deviations associated with these means is equal to or greater than 1.00*

Across most competencies, CIOs and Deputy CIOs have used each competency more frequently than have Direct Reports and Executives/Managers. This trend is especially true for the following four competencies: Mapping IT to Mission, Budget Process, Acquisition, and Process Management. Among all three levels, respondents most frequently use Technical competencies, people Management competencies, and Leadership competencies.

The results for self assessed developmental needs are presented in Table 7.

Table 7: Mean Competency DEVELOPMENTAL NEED Ratings by Organizational Level

Competencies	ORGANIZATIONAL LEVEL		
POLICY AND ORGANIZATIONAL	**CIO or Deputy CIO**	**Direct Report**	**Executive or Manager**
Mapping IT to Mission	3.0	3.2	3.1
Budget Process	2.5	2.9*	3.7

Organizational Processes	3.2	3.1	3.3
CAPITAL PLANNING			
Investment Assessment	3.3	3.1*	3.4*
Acquisition	3.1	3.0*	2.9*
Implementation & Performance Measures	3.5	3.4*	4.0
MANAGERIAL			
Leadership	3.0*	2.7*	3.2*
Process Management	3.2	3.0	3.2
People Management	2.7	2.9*	3.3*
TECHNICAL			
Technical	3.3	3.1*	3.3*

** the standard deviations associated with these means is equal to or greater than 1.00*

Organizational level comparisons across the three levels of respondents show higher amounts of need among executives and managers in the areas of Budget Process, Implementation and Performance measures, Leadership, and People Management. Within all three levels, respondents indicate that Implementation and Performance Measurement was the area in which they felt the greatest desire for further developmental need. Again, the standard deviations are greater in Developmental Need than they are in Importance and Frequency ratings (see explanation following Table 4).

3.2.8. Other Items

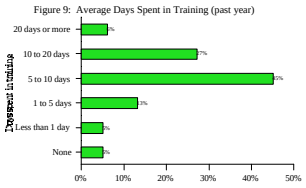
This section presents results from two other issues which were examined in the Senior IT Management Assessment. The first issue concerns training interests and participation in training, and the second issue examines retirement eligibility. Results from questions on each issue will be reviewed in this section of the report.

3.2.8.1. Training Issues

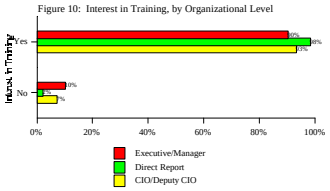
The first training question asked respondents approximately how many days they spent in work-related training in the past year (between 10/1/97 through 10/1/98)? Respondents were to include attendance at conferences, executive training programs, and all other job-related training in their

estimate. Figure 9 shows the percentage of respondents who checked one of six provided alternatives.

Results show that most (45%) spent between five to ten days (one to two weeks) in job-related training during the past year.



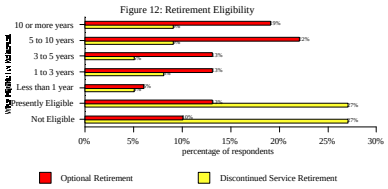
A second training-related question asked respondents whether they were interested in participating in more job-related training. Nearly all individuals regardless or organizational level indicated that they would be interested in more job-related training opportunities (see Figure 10).

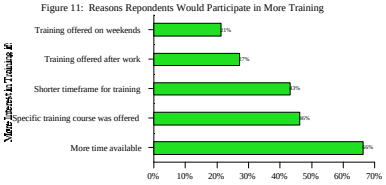


The final question concerning job-related training looks at barriers to participating in training. As shown in Figure 11, the lack of time available to participate in training is the main reason respondents do not participate in more training courses or programs. Yet, nearly half of the respondents also would prefer shorter timeframes for training courses, and would take more training if the specific training program they wanted to take was offered.

3.2.8.2. Retirement Eligibility

Retirement eligibility was thought to be a possible concern for the Treasury Department, so within the demographic section of the survey we added two questions that ask respondents to indicate when they are eligible for either optional retirement or discontinued service retirement. Figure 12 presents the results of these questions.





These results show that 45% of respondents will be eligible for optional retirement in less than five years, and that 45% are eligible for discontinued service retirement in less than five years (note: these were two separate questions, so there is overlap between the percentage of people eligible for both types of retirement). These results are most dramatic at the CIO/Deputy CIO level, where 53% are eligible for optional retirement in less than five years, and 54% are eligible for discontinued service retirement in under five years.

3.2.8.3 Bureau-Specific Results

The entire annotated questionnaire is presented in *Appendix B*, which shows each competency rating not only by bureau size and organizational level, but also by specific bureau. For five of the 15 bureaus, the sample size within the bureau was less than four, thus providing insufficient sample size for computing bureau-level means (these are highlighted in the appendix).

In general, the bureau-specific results parallel the more global results presented in this report, however in some cases differences *between* bureaus can be quite large. It is important, however, to note that the number of respondents within each bureau is small, thus the validity and reliability of these results may be questionable (as such, all Analysis of Variance [ANOVA] computations comparing bureau-level data were non-significant, due to the small sample sizes). Nonetheless, this additional information may be used to supplement the main findings presented throughout this report.

3.2.8.4. Effectiveness of the Web-Based Survey Method

At the end of the Senior IT Management Assessment, ***DAI*** placed one question to respondents asking them whether they believed the Internet-based survey was more effective and efficient than taking a traditional pen and paper survey. All 67 participants responded to this item; 73% agreed or strongly agreed that the Internet-based survey was the best method (37% agreed, 36% strongly agreed). Only one respondent (1.5% of the sample) strongly disagreed, and four respondents (6% of the sample) disagreed. Therefore, we can conclude that the methodology employed by ***DAI*** was, in general, the preferred method for survey administration.

3.2.8.5. Group-Level Developmental Need

One questions was asked prior to the Qualitative Response section, in which respondents were

asked to report the group in which they see the greatest developmental need. They were then asked in which specific competencies this selected group required the most development. Tables 8, 9, and 10 presents these results. Table 8 contains the results as reported by CIOs/Deputy CIOs; Table 9 presents the results as reported by Direct Reports, and Table 10 shows the results for Executives/Managers. (Note that each respondent was permitted to select up to three competency areas in which they felt the selected group required development).

Table 8: Developmental Need of Organizational Levels, as Reported by CIOs/Deputy CIOs

	CIOs/Deputy CIOs reports of groups requiring the greatest development:			
	CIOs/ Deputy CIOs	**Direct Reports**	**Executives or Managers**	**IT Staff**
Number of responses*:	3	3	4	5
Greatest Area of needed Development	Mapping IT to Mission (n=2)	Mapping IT to Mission (n=2)	Leadership (n=3)	Technical (n=4)
Second Greatest Area of needed Development	Investment Assessment (n=2)	Process Management (n=2)	Organizational Processes (n=2)	Mapping IT to Mission (n=3)
Third Greatest Area of needed Development	none	none	Investment Assessment (n=2)	Implementation and Performance Measurement (n=2)
Fourth Greatest Area of needed Development	none	none	Implementation and Performance Measurement (n=2)	Leadership (n=2)
Fifth Greatest Area of needed Development	none	none	none	People Management (n=2)

(Frequencies equal to "1" are not reported, since a frequency of "1" does not constitute agreement among respondents)

*** Number of CIOs/Deputy CIOs selecting this level as needing the GREATEST development**

Table 9: Developmental Need of Organizational Levels, as Reported by Direct Reports

	Direct Reports responses for groups requiring the greatest development:			
	CIOs/ Deputy CIOs	**Direct Reports**	**Executives or Managers**	**IT Staff**
Number of responses*:	4	9	11	16
Greatest Area of needed Development	Investment Assessment (n=2)	Implementation and Performance Measurement (n=6)	Mapping IT to Mission (n=5)	Technical (n=13)
Second Greatest Area of needed Development	Implementation and Performance Measurement (n=2)	Mapping IT to Mission (n=5)	Investment Assessment (n=5)	Mapping IT to Mission (n=6)
Third Greatest Area of needed Development	Leadership (n=2)	Technical (n=4)	Implementation and Performance Measurement (n=5)	Implementation and Performance Measurement (n=5)
Fourth Greatest Area of needed Development	People Management (n=2)	Leadership (n=3)	Leadership (n=5)	Budget Process (n=3)
Fifth Greatest Area of needed Development	Technical (n=2)	Organizational Processes (n=2)	People Management (n=5)	Acquisition (n=3)
Sixth Greatest Area of needed Development	none	Process Management (n=2)	Technical (n=5)	Organizational Processes (n=2)
Seventh Greatest Area of needed Development	none	People Management (n=2)	none	Process Management (n=2)

*** Number of Direct Reports selecting this level as needing the GREATEST development**

Table 10: Developmental Need of Organizational Levels, as Reported by Executives/Managers

	Executives and Managers reports of groups requiring the greatest development:

	CIOs/ Deputy CIOs	Direct Reports	Executives or Managers	IT Staff
Number of responses*:	none**	4	3	3
Greatest Area of needed Development	none	People Management (n=2)	Budget Process (n=2)	Implementation and Performance Measurement (n=2)
Second Greatest Area of needed Development	none	none	Leadership (n=2)	Technical (n=2)
Third Greatest Area of needed Development	none	none	Process Management (n=2)	none
Fourth Greatest Area of needed Development	none	none	none	none

*** Number of Executives/Managers selecting this level as needing the GREATEST development**
** no executives/ managers rate CIOs as having the greatest developmental need

IV. Results: Qualitative

4.1. Introduction

This section provides the results to an open-ended question that relates to the Development Need section of the survey. The first question in the Development Need section asks respondents to identify which group has the greatest development need. Possible responses were: (1) CIOs and Deputy CIOs, (2) Direct Reports to CIOs or Direct Reports to Deputy CIOs, (3) Executives or Managers with IT responsibilities (reporting to a functional leader; not a direct report to a CIO or Deputy CIO), (4) IT staff, and (5) no development need for any of the groups. The open-ended question asked the respondents to explain why the group they selected has the greatest amount of development need, and in what specific areas this development need exists. Forty eight of the 67 survey participants provided a response to this open-ended question.

4.2. Coding of Responses

Cluster analysis was performed on the open-ended responses. The first step in this process was to code each response. All responses were carefully examined for common themes. Responses were then coded according to the theme, or topic, that best described the content of each response. The responses under each theme were also coded to include the following three factors: the respondent's Bureau size, which group the respondent identified as having the highest level of developmental need, and the managerial level of the respondent.

Results to the open-ended question are organized by frequency within each group identified as having developmental needs, by the managerial level of the respondent that identified such needs, and by Bureau size. General feelings underscore the need to adhere to the rules and guidelines of the Clinger-Cohen Act. For example, a respondent at the CIO or Deputy CIO level wrote: *"it is imperative that we adhere to Clinger-Cohen and get the most for our investments. Generally we have little experience in building investment decision documents and making related presentations to the Investment Review Board. This would be an area that would benefit the entire Department."*

4.3. Findings

Results to the open-ended question are organized into three broad areas: (1) Knowledge, Skills, and Abilities through Training and Education - areas where IT Managers were identified as lacking in certain skills and abilities and areas where training would benefit the effectiveness of the IT Managers; (2) Organizational Issues - organization-wide issues that affect the IT Managers' abilities to perform effectively given certain organizational constraints; (3) Organizational Development Issues - themes that could improve how work processes in general are performed; and (4) Single Comments - themes that were mentioned only once by the group of IT Managers.

4.3.1 Knowledge, Skills, and Abilities through Training and Education

4.3.1.1. Knowledge, Skills, and Abilities

The categories presented in this section concern the developmental needs that relate to the importance of IT Managers' knowledge, skills, and abilities in various areas. Table 11 depicts the knowledge, skills, and abilities (KSAs) most often cited by the respondents as developmental needs and the managerial level where these skills are most needed. Table 1A in *Appendix C* provides additional detail with respect to the managerial level of the respondents that identified such needs, as well as the Bureau size.

Table 11: KSA Needs by Managerial Level

	Group Identified			
Theme:	CIOs/ Deputy CIOs	Direct Reports	Executives/ Managers	IT Staff
Technical	2	2	2	10
Project Management	0	0	2	3
Tech. to Mgr. Position	1	1	2	0
People	0	1	1	2
Communication	0	1	2	1
Process Management	0	1	0	1

Technical Skills emerge as the most frequently mentioned area for KSA development. The importance of technical skills development at the IT Staff level, in particular, stands out. A comment by a respondent depicts the general feeling for the IT Staff: *"The technical staff exhibit shortcomings in knowledge of operating systems and management thereof, in the development of database applications, in the development of web technology, and in the organization of basic IT support and services. These knowledges are critical to the successful fulfillment of their role and function in the organization."* Other comments concerning the technical skills of the IT staff, particularly in medium-sized bureaus, relate to the importance of their abilities to stay current with the changing technological environment and keep their skills up to date. Some comments by the respondents that illustrate the developmental need in this area are: *"The actual development staff needs to be [kept] up to date with the latest tools and hardware available"* ; *"Failing to keep current on software and hardware developments and maintaining the ability to implement and*

maintain new technology"; and *"Telecommunications technology has exploded around us and most of our technicians have no clue with respect to IP based networks, domains, and addressing schemes. We continue to depend on expensive, outdated technology just because it's there!!!"*

Project Management skills are identified as being important for Executives or Managers with IT responsibilities as well as the IT staff. Respondents to this developmental need, mostly consisting of CIOs or Deputies and Direct Reports, generally feel that some IT Managers at these levels could benefit from developmental activities that would improve their ability to effectively manage projects from start to finish, while keeping senior management informed of progress. For example, one CIO or Deputy CIO said, *"But they also suffer from a lack of project management skills - how to plan the steps and timeframes to move a project successfully from point a to point b."*

Moving from a Technical to a Managerial Position is an area for development for Executives or Managers, Direct Reports, and CIOs or Deputy CIOs. Respondents, consisting of IT Managers from all levels, feel that improvements could be made in transitioning technical personnel into managerial positions. One IT Manager at the CIO or Deputy CIO level cites, *"I have found that many IT managers (at the branch or section level) were good technicians and, at some point, were promoted into the management ranks. Many do not understand the need to manage people, focusing instead on the technical aspects of the job. We need more managers!"*

The final three themes under the KSA category are *People Skills, Communication Skills, and Process Management Skills*. These skills are mentioned as a developmental need for all levels, except at the CIO or Deputy CIO level, with particular needs identified at the Executive or Manager and the IT Staff levels. As one Direct Report to a CIO or Deputy CIO states about Executives and Managers with IT responsibilities, *"I believe they are the most critical managers that ensure our day-to-day mission requirements are met through our most valuable resource (Our People). If they are not equipped with great people skills, [and] excellent program/project management skills then our organization is doomed for failure."* Referring to the IT Staff level, one CIO or Deputy CIO responds, *"They also at times suffer from [a] lack of communication skills. They see what needs to be done, but can't describe it well to others."*

4.3.1.2. Training and Education

This section presents qualitative results concerning necessary job-related training that has been identified for the four IT Management levels. Table 12 lists the training areas most often mentioned and the managerial level that would most benefit from the training. Table 2A in *Appendix C* provides additional detail with respect to the managerial level of the respondents that identified such needs as well as Bureau size.

Table 12. Training and Education Needs by Managerial Level

	Group Identified			
Theme:	CIOs/ Deputy CIOs	Direct Reports	Executives/ Managers	IT Staff
Technical Competency	1	3	2	6
Leadership	0 DR EM	2	3	1
Acquisition	0	1	0	1
Policy and Procedure	0 DR EM	0	1	0

Most of the respondents feel that *Technical Training* is the primary area of training need and it is equally important for small and medium-sized bureaus. IT Managers at all levels cite Technical Training as a developmental need, particularly for the IT Staff, Direct Reports to CIOs or Deputy CIOs, and Executives/Managers with IT responsibilities. Although technical training is identified as important for these three groups, reasons underlying the training need differs according to managerial level. For example, *"The IT staff must be knowledgeable of the techniques and technology in order that the managers have alternate resources to apply against the myriad of assignments that arise."* Executives/Managers with IT responsibilities need to be technically trained simply because *"they work closer with technical staff"* more than any other managerial level. Finally, one Direct Report commented about Direct Reports in general: *"This group is normally bypassed in this area (for the sake of subordinate staff's technical training, etc.). There is seldom enough money to maintain a well round, highly technical workforce and this group suffers first."*

Leadership Training is the second most frequently cited topic within the training and education needs category. Respondents, consisting of IT Managers from all levels, feel that Direct Report and Executives/Managers would most benefit from such training. One comment concerning the Executive/Manager level made was: *"This group will be the leaders of tomorrow. This group needs to learn how to provide true leadership. The success of IT in the future will be determined by the success of this group. Technical staff will always by OK; however, they need excellent leaders."* Referring to Direct Reports, one respondent feels, *"There is a great need for people management and leadership by example, being held accountable for your actions."*

Acquisition Training was also mentioned as an area where training is needed regarding assessing

investments and making investment decisions. One respondent feels that training in acquisition could improve how decisions are made: *"Decisions have been made about investments primarily on the subjective view of some managers, not the strategic investment needs of the organization."* Similarly, another respondent says: *"[Also important] is understanding and communicating the relative value of investments to their staff and customers, who always question WHY."*

4.3.2. Organizational Issues

The themes in this section refer to topics that do not relate to individual KSAs or training needs, but rather relate to organization-wide issues and the IT Managers' abilities to perform effectively given certain organizational constraints (e.g., budgetary, hiring practices). Table 10 lists the issues most often mentioned and the managerial level most affected. Table 3A in *Appendix C* provides additional detail with respect to the managerial level of the respondents that identified such needs as well as Bureau size.

Table 13: Organizational Issues by Managerial Level

	Group Identified			
Theme:	CIOs/ Deputy CIOs	Direct Reports	Executives/ Managers	IT Staff
Org. & Mission Knowledge	1	1	4	4
Budgetary Constraints	1	2	1	3
Attracting and Retaining Technical Pers.	0	1	0	1
Customer Service	0	0	0	2

Knowledge of the Organization and its Mission is cited by all Managerial Levels as being the greatest developmental need in the Organization Issues category, particularly for Executives/Managers with IT responsibilities and IT Staff. The general feeling regarding Executives/Managers is that *"first level management needs to be able to understand how their area of responsibility links to the overall Bureau mission, delegate that responsibility, and use teams to achieve those goals."* Respondents cite that the IT Staff needs to develop a deeper

understanding of the organization's mission, goals, and objectives: *"IT Staff generally need to increase their technical skills and how the project they work on link[s] to the overall goals and*

objectives of the agency. Most do not see their work as an investment that needs to be justified." In addition to being most important for Executives/Managers and IT Staff, the respondents feel that the "Knowledge of the Organization and it's Mission" developmental need is required most for medium-sized Bureaus.

Budgetary Constraints is an organizational issue that concerns all IT Managerial levels, but mostly affects the IT staff and Direct reports. Comments regarding Budgetary Constraints are different for the two groups. Respondents generally feel that Budgetary Constraints have negatively affected the IT staff because they *"prohibit the technical staff from receiving training in the latest technologies."* Many respondents feel that the training budget, in particular, is insufficient: *"Training budgets have been inadequate to maintain skills due to constant changes in technology. This has been especially apparent in the areas of LAN administration, telecommunications, and applications development."* Concerns about Budgetary Constraints affect Direct Reports in a different manner. Respondents feel that it is important that Direct Reports properly manage budgets by having a thorough understanding of how IT projects tie into the organization's mission and objectives and being able to *"proper[ly] justify IT funding and the most effective use of those funds."*

The Bureau's ability to *Attract and Retain Technical Personnel* is an issue that concerns some respondents. In order to have IT functions keep pace with the changing technological environment, qualified technical personnel whose skills are kept up to date are needed. Some IT Managers fear that the Bureau may be weak in the *"ability to hire the right people for [the] job in [the] changing technical environment. [There is a] need to change and upgrade people with [the] environment."*

The final theme under the Organization Issues category is *Customer Service*. Direct Reports feel that this issue is most important for the IT Staff. Those who cite Customer Service as an issue report that CIOs and most IT managers appreciate the importance and need for customer service. The IT Managers, on the other hand, may not *"see or appreciate a direct linkage between the direct application of their skills and customers - individual users, organizational components or the overall agency."*

4.3.3. Organizational Development Themes

Three themes emerged from the open-ended responses that were mentioned less frequently than others; however, they are important to cite because they relate to how work processes can be improved. Direct Reports, in particular, feel that *Empowerment, Delegation,* and *Teaming* should be integral components of carrying out the organization's mission, goals, and objectives. One Direct Report feels that *"management needs to be able to understand how their area of responsibility links to the overall Bureau mission, delegate that responsibility, and use teams to achieve those goals."*

4.3.4. Single Comment Themes

This last section lists themes that were only mentioned once by the IT Managers. One Direct Report feels that *favoritism* is an issue regarding who gets selected for CIO or Deputy CIO positions: *"most of these people selected for these positions do not have IT experience and only get these jobs because they know someone."* Another Direct Report cites that conflicts can often be avoided if *subordinates ask for help* when needed instead of waiting until problems arise. An Executive or Manager with IT responsibilities states that Direct Reports need to be *held more accountable* for their decisions and actions. A Direct Report feels that *program evaluation* is a area of weakness at the Direct Report Level. *Succession planning* is another concern of a Direct Report: *"The group of direct reports to a CIO/deputy CIO will take over the reins as CIO in the next two to five years, as CIOs retire. Hence, this group needs to be properly developed to take on that challenge."*

V. Conclusions

As part of the goal of assessing competencies for the Treasury Department, ***DAI*** developed a survey which included a number of questions that delve into the importance, frequency, and developmental need of overall competencies, and specific competency components. In addition, to help target needs for specific groups, we analyzed not only overall results for competencies along these three dimensions, but also for different bureau sizes, different organizational levels, and specific bureaus.

5.1 Background

Survey respondents found that the web-based survey was an efficient and effective way of collecting data. Content validity and reliability was established through the use of the University of Maryland survey items and items previously used by ***DAI*** in similar competency assessments. Face validity of the survey instrument was established by the input of the Federal CIO Council and Treasury Staff. The overall response rate of the IT Assessment was 77%. This response rate is fairly representative of the actual population with respect to bureau size and the respondents' level within the organization

Most respondents (61%) report that they are responsible for both IT policy and IT delivery; the higher levels report more often that they are responsible for both policy and delivery. Respondents also have significant experience in the data processing or IRM field, over three fourths (76%) have spent at least fifteen years in the field.

5.2. Most Important Competencies

Respondents feel that all of the ten competencies are important behaviors for their positions (all received a mean rating over a 4 on a 5-point scale). This suggests that the competencies selected for inclusion in the IT Assessment are valid indicators for assessing organizational competencies.

Although all ten competencies are rated as important, the overall analysis shows that the most important competencies are Leadership, People Management, Technical Competencies, and Mapping IT to Mission. Small, medium, and large sized bureaus collectively rate these

competencies as very important for all managerial levels.

5.3. Competency Ratings by Bureau Size

Across all three bureau sizes, Leadership was rated as being of the highest importance. However, differences between ratings of competencies by bureau sizes exist for some of the other competencies. Small bureaus rated the importance of technical competencies higher than did medium or large size bureaus. In addition, they rate the frequency with which they perform technical competencies higher than do larger bureaus. Yet, as compared to medium and large bureaus, they report that their developmental need in the Technical competency area is lower. This lower developmental need may be due to already possessing the technical skills needed, since these skills may be more essential for the smaller bureaus due to the higher importance and greater frequency with which they have to exhibit technical competence. Conversely, large bureaus report high developmental need in these technical competencies.

Large bureaus report higher importance in Investment Assessment competencies than do small or medium-size bureaus. In addition, these large bureaus report a moderately high developmental need in this area. Medium and large bureaus also report higher frequencies in People Management (which also had a high importance rating overall) and in Budget Process competencies than do smaller bureaus.

5.4. Competency Ratings by Organizational Level

As previously mentioned, Leadership received the highest importance rating of all competencies in general, and across the different bureaus. Leadership also has the highest importance rating across the three organizational levels (CIOs and Deputy CIOs, Direct Reports, and Executives/Managers). Thus, all levels consider Leadership to be a key competency for their positions.

CIOs and Deputy CIOs rated most competencies as being very important to their positions. In addition to Leadership, they also rated Mapping IT to Mission, People Management, and Budget competencies as being of extreme importance. CIOs also perform these competencies most frequently; all four of these competencies were rated highest in frequency by the CIOs. Developmental needs for the CIOs exist in Technical competencies (especially for CIOs in medium and large size bureaus). Other competencies rated relatively high for developmental need by CIOs are Implementation and Performance Measurement (especially for CIOs in small and medium size bureaus) and Investment Assessment (especially for CIOs in large bureaus).

Direct Reports also rated Leadership as being of key importance for their position, In addition to Leadership, Direct Reports rated People Management and Technical Competence as highly important. All three competencies (Leadership, Technical, and People Management) were also given the highest frequency ratings by Direct Reports. The greatest developmental need for Direct

Reports is Implementation and Performance measurement; this developmental need is especially high for small and medium size bureaus.

Executives/Managers rated Leadership, People Management, and Technical competencies as the

most important for their position. These three competencies were also rated as being performed most frequently by this group of respondents. Of these three important and frequently performed competencies, the highest developmental needs for executives and managers is in People Management and Technical competence; this need is greatest for executives and managers in medium sized bureaus. Other developmental needs rated moderately high by executives and managers are Implementation and Performance Measurement (this need is greatest among those in small and medium size bureaus). Implementation and Performance Measurement had a high importance rating, and a moderate frequency rating for the group of executives and managers. Budget Processes also received high importance and moderate frequency ratings; executives and managers especially in small and medium size bureaus report a relatively high developmental need in this competency.

5.5. Other Issues

Most respondents have participated in training over the past year, however nearly all respondents wish to have more training, especially if it is presented in a shorter timeframe, and if the courses they were interested in were offered. Approximately one in four also stated that they are interested in training courses which are offered over the weekends or after work.

Of those who responded to the survey, nearly one half are eligible for optional retirement within the next five years. More than one in ten is currently eligible for retirement. This trend is especially dramatic for CIOs and Deputy CIOs, where more than half are eligible for retirement in under five years, and one in five is currently eligible. Eligibility for discontinued service retirement shows a similar pattern of results; nearly half of the workforce represented by these respondents will be eligible for discontinued service retirement within the next five years.

5.6. Qualitative Results

Qualitative analyses support most of the quantitative findings. Through the open-ended question, survey respondents identified developmental needs for the various managerial levels. Technical skills and the ability to stay current with changes in technology are the most important skills to develop and maintain, particularly for the IT Staff. Managers at all levels cite Leadership is a development need for Direct Reports and Executives/Managers. Direct reports, in particular, feel that the Executives/Managers and IT staff need a better understanding of the organization and its mission and how the projects they work on link to the overall goals and objectives of the agency. Despite the various developmental needs mentioned, IT Managers at all levels are interested in developing their competencies, and acquiring needed training and education so that they can perform their jobs more effectively.

VI. Recommendations

The purpose of the Senior IT Management Assessment was to determine to what degree Treasury's Senior IT Management corps possessed the identified competencies. ***DAI*** assessed the importance, frequency and developmental needs across bureaus of different sizes, and across three organizational levels of respondents. Our conclusions and recommendations are based on the results of this assessment.

For these recommendations to be effective, it is critical that they be embraced as worthwhile by management (who must provide the resources for their implementation) as well as by the workforce in general (who must consider the outcomes as those desired to enhance competency development). Therefore, in discussing and implementing recommendations, we recommend involvement of a group of individuals (an "intervention team") who represent the different program areas, bureaus, and levels represented in the population of individuals surveyed in this study.

For each area we feel to be of great importance to the Treasury Department, we provide potential interventions and recommendations.

6.1 Overall Importance of Competencies

All competencies were rated as being of great importance for respondents; therefore, accurate and periodic assessment of these competencies is recommended. In addition, we recommend monitoring organizational performance of the competencies in regular intervals (biannual or annually). Data collection efforts for competency assessment should involve all levels of employees, using multiple assessment methods (supervisory assessment, peer assessment, and client/customer assessment).

6.2. Leadership Competency

The Leadership competency was rated as the most important and most frequently used competency, across all levels assessed in this study. Since these leadership skills are required to a great degree, the refinement and further development of leadership skills is essential. Assessment of the specific leadership skills required would need to be conducted first, before the implementation of leadership development initiatives. We recommend a needs analysis in the area of managerial and supervisory leadership, which would target specific leadership skills and traits which are currently required, and which will be required in the future. Following this analysis, leadership skills-building initiatives and training programs can be offered to employees (especially to those in higher levels of the organization).

6.3. Retention of Qualified Technical Personnel

Retaining specialized, qualified technical personnel is essential for the optimal functioning of all bureaus that rely on IT staff. We suggest the development and refinement of rewards and recognition programs for high quality work, and the development of a motivational program that

rewards successful and innovative ideas that are put into action. These programs should involve individuals in environmental scanning, developing ideas and proposals to improve existing technology, and developing a forum in which people can present their ideas openly and without reservations.

6.4. Involve Individuals in Strategic Planning Processes; Communicate Organizational Mission and Goals to Employees

A clear understanding of the Treasury Department's mission is desired my many employees. Often (especially during and after strategic changes), people feel confusion over the mission as a whole, how the components of the organization fit together, the goals which management has set, and the future of the organization as a whole. Possible interventions for consideration include using the Treasury Website to communicate topics dealing with these competencies, and for sharing knowledge about strategies which are a result of this assessment. Also, by making the Treasury's IT Skills Enhancement Subcommittee Website more widely known, the site can be used as a forum for communicating issues related to the competencies allowing posting of information as well as interactive capabilities. In this website, various "forums" could be implemented which involve senior management, who would respond to questions, concerns, or suggestions posted on the bulletin board.

In addition to improved and new forums of electronic information transmittal, the benefit of greater face-to-face interaction among workers, supervisors, and senior management cannot be stressed enough. An intervention which has worked well for other organizations is to schedule a regular lunch-time "meet the Senior Staff" Town meeting. This informal meeting would shift the onus of providing information from solely being the responsibility of senior staff, to a shared process for all who are interested in participating.

6.5. Training

In developing interventions to increase employee satisfaction (and participation in) training, specific training needs must be identified. Results from this study should be used as a starting point for identifying training needs (technical training, leadership training, budget training, and time management training, etc), however a deeper assessment of specific training issues (skills-building as well as personal) should be identified. In addition to identifying topics where training is essential, this assessment should identify topics which are considered unessential, and should identify which groups of individuals require which training topics. Alternative training modalities should also be considered where appropriate (such as mentoring, formal education, distance learning programs, and computer-based training). A plan for implementing this training initiative and these alternatives should be the responsibility of the intervention team.

6.6. Performance Management and Performance Appraisal

Most organizations find it necessary to continually evaluate and renew their performance assessment system; the results from this assessment parallel these feelings in that respondents

indicate that performance measurement (internal and external) is an area in which they desire further development. There is no one best performance management system that fits all organizations. The art of establishing a good system involves understanding the culture and the needs of the people. Nonetheless, the general process we recommend here is an effective process for developing and improving performance measurements:

(1) Generate an implementation plan tailored to the Treasury Department's needs. This plan would be developed by both a team of Treasury Department staff, as well as expert(s) in performance measurement from outside the Treasury Department . The plan should incorporate agency goals, define a consistent method of providing feedback to employees about their performance, describe the rewards and recognition plans and how they are linked to performance, outline fair promotion and advancement criteria, and should identify shortcomings in the current performance system.

(2) Collect job analysis data. This is a critical step to the performance management process, usually involving job analysis experts to assist in collecting either task descriptions or critical incidents related to each position. This information must be clear, well defined and behaviorally-based, since it serves as the basis (the criteria) for which individual performance will be measured.

(3) Develop measurement instruments or survey tools to collect performance-based information. The final measurement can also be composite measures (usually a composite more accurately defines a person's or a group's performance), which combines different ratings on a variety of scales to arrive at a total performance score.

(4) Train supervisors on how to observe performance, make ratings, and provide feedback.

(5) Finally, the monitoring and revision of the process should be conducted as needed; all new systems should be fine-tuned based upon lessons learned during the initial implementation phases.

6.7. Individual Development Plans

Due to the high variability in responses for Developmental Need within each competency, and the possible wide variety of skill sets of the population surveyed, it is apparent that not all people require development in each competency. Therefore, we suggest the development and use of Individual Development Plans (IDP's) to map each person's current skills, as well as the skills which need further development and training. The IDP's can then be used by each senior manager to tailor skills development, and may also be used by the Treasury Department to select and promote individuals who have the optimal mix of skills for specific positions.